

~~What is claimed is:~~

1. A double deck elevator comprising:

an upper cage and a lower cage vertically movable together
in a hoistway; and

covers for covering a space between the upper cage and the lower cage at a door-side, two lateral-sides and a backside of the space.

2. A double deck elevator according to claim 1, wherein outer surfaces of said covers and outer surfaces of the upper cage and the lower cage are connected to each other without difference in level.

3. A double deck elevators according to claims 1, wherein said covers are connected to at least one of the upper cage and the lower cage by means of an elastic member for absorbing a distance change between the upper cage and the lower cage.

4. A double deck elevator according to claims 1, further comprising a falling matter catching member for catching falling matters falling through a clearance between a door-side inner wall of the hoistway and the upper cage,

said catching member being movably arranged in the space to approach and move apart from the door-side inner wall when the upper cage and the lower cage stop vertical moving in the hoistway, and

one of said covers which covers the space at the door-side having an opening through which the falling matter catching member approaches and moves apart the door-side inner wall.

5. A double deck elevator according to claim 1, wherein said covers are provided with a plurality of protrusions on outer surfaces thereof for guiding an airflow flowing along the outer surfaces.

6. A double deck elevator according to claim 1, further comprising:

an upper airflow guiding member arranged above the upper cage for guiding an airflow into clearances between inner walls of the hoistway and outer side surfaces of the upper cage;

a lower airflow guiding member arranged below the lower

cage for guiding an airflow into clearances between inner walls of the hoistway and outer side surfaces of the lower cage; and

said upper and lower airflow guiding members being in the form of a capsule.

7. A double deck elevator according to claim 6, further comprising noise absorbing members attached to at least one of the inner surfaces of the covers and the upper and lower airflow guiding members.

8. A double deck elevator according to claim 6, further comprising:

an upper airflow guiding cone arranged on the upper airflow guiding member for guiding an airflow to the outer surfaces of the upper airflow guiding member; and

a lower airflow guiding cone arranged below the lower airflow guiding member for guiding an airflow to the outer surfaces of the lower airflow guiding member.

9. A double deck elevator according to claim 6, wherein said upper and lower airflow guiding members are provided with uneven serrations on outer surfaces thereof respectively.

10. A double deck elevator comprising:

an upper cage and a lower cage vertically movable together in a hoistway; and

covers for covering a space between the upper cage and the lower cage at a door-side, two lateral-sides and a backside of the space; and

at least one of the covers which covers the space at the door-side of the space being positioned closer to a door-side inner wall of the hoistway than a door driving unit which opens and closes the doors of the cages.

11. A double deck elevator according to claim 10, wherein said at least one of the covers which covers the space at the door-side is provided with slit which door link connecting the doors to the door-driving unit is inserted therethrough.

12. A double deck elevator according to claim 11, further comprising a slit-closing member made of an elastic material, which closes a clearances between the periphery of the slit and the door links and at the same time allows the displacement of

said door links by elastic deformation thereof.

13. A double deck elevator according to claim 11, further comprising a bellows type slit-closing member made of an elastic material, which closes a clearances between the periphery of said slit and said door link and at the same time allows a displacement of the door link by elastic expansion and contraction thereof.

14. A double deck elevator according to claim 11, further comprising a brush type slit-closing member made of elastic bristles, which closes a clearances between a periphery of the slit and said door link and at the same time allows a displacement of the door link by elastic deflection thereof.

15. A double deck elevator comprising:

an upper cage and a lower cage mounted on a cage frame and vertically movable together in a hoistway;

covers for covering a space between the upper cage and the lower cage at a door-side, two lateral-sides and a backside of the space; and

a falling matter catching member for catching falling matters falling through a clearance between a door-side inner wall of the hoistway and the upper cage, said falling matter catching member being movably arranged in the space to approach and moves apart from a door-side inner wall of the hoistway; and

at least one of the covers which covers the space at the door-side having an opening through which the falling matter catching member approaches and moves apart from the door-side inner wall of the hoistway.

16. A double deck elevator according to claim 15, wherein said falling matter catching member contacts the cover which covers the space at the door-side, when said falling matter catching member moves apart from the door-side inner wall of the hoistway.

17. A double deck elevator according to claim 16, wherein said cover which covers the space at the door-side serves as a stopper for limiting a moving stroke of the falling matter catching member, when the falling matter catching member moves apart from the door-side inner wall of the hoistway.

18. A double deck elevator according to claim 16, further comprising a clearance-closing member for closing a clearance

between the falling matter catching member and the cover which covers the space at the door-side when the falling matter catching member moves apart from the door-side inner wall of the hoistway.

19. A double deck elevator according to claim 18, wherein said clearance-closing member is a strip made of an elastic material attached on at least one of the falling matter catching member and the cover which covers the space at the door-side,

said strip elastically deforms when pressed against the cover which covers the space at the door-side by the falling matter catching member.

20. A double deck elevator according to claim 18, wherein said clearance-closing member is a plate,

said plate being connected to the falling matter catching member at an one end thereof by means of a connecting link and is slidably held by the cover which covers the space at the door-side at another end thereof.

21. A double deck elevator according to claim 18, wherein said clearance-closing member is a plate,

said plate is pivotally connected to the door-side cover at an one end thereof and is biased by the biasing means so that the another end of the clearance-closing member always contacts the falling matter catching member.

22. A double deck elevator according to claim 18, wherein said clearance-closing member is a plate,

said plate being connected to the falling matter catching member at an one end thereof by means of a connecting link and being pivotably connected to the door-side cover at another end thereof.

23. A double deck elevator according to claim 18, wherein said clearance-closing member is connected to the falling matter catching member at an one end thereof and is connected to the door-side cover at another end thereof, and

said clearance-closing member being made of an elastic material and expanding and contracting in accordance with the movement of the falling matter catching member.

24. A double deck elevator according to claim 15, further comprising an opening closing member attached to the falling

matter catching member for closing the opening of the cover when the falling matter catching member moves apart from the door-side inner wall of the hoistway.

25. A double deck elevator according to claim 15, further comprising a noise insulating member arranged in the space for insulating noise entering through the opening of the door-side cover.

26. A double deck elevator according to claim 15, wherein said door-side cover is divided into parts which are smaller than a floor-side door opening.

27. A double deck elevator according to claim 25, wherein said parts of the door-side cover are removably mounted to at least one of the upper cage, the lower cage and the cage frame by means of mounting means manually operable from the floor-side door opening.